

Brachylobopyga decorata n. gen., n. sp. from Sulawesi, a new taxon of the subtribe Cosmopsaltriaria (Homoptera, Cicadoidea: Cicadidae)

by

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ABSTRACT. — *Brachylobopyga decorata* n. gen., n. sp. is described from Sulawesi. Its phylogenetic relationships and distribution corroborate the hypothesized historic biogeography of the subtribe Cosmopsaltriaria, which is briefly summarized.

INTRODUCTION

During my studies of the subtribe Cosmopsaltriaria (Duffels, 1977, 1982) I set apart an apparently new species from Sulawesi which presumably belonged to the subtribe but could not be included in one of the existing genera, neither in *Cosmopsaltria* Stål, 1866, nor in one of the genera resulting from the tripartition of *Diceropyga* Stål, 1870: *Diceropyga* sensu Duffels, 1977, *Dilobopyga* Duffels, 1977, and *Aceropyga* Duffels, 1977.

Recent, more thorough, examination of the new species led to the conclusion that it indeed belongs to the Cosmopsaltriaria and represents a new genus.

The new genus is characterized by broad and truncate lateral processes of the pygofer, a very short postclypeus, a very narrow pygofer and a long strongly chitinized, apically flattened aedeagus. The new species has a very characteristic marking on head, thorax and abdomen.

DESCRIPTION

Brachylobopyga n. gen.

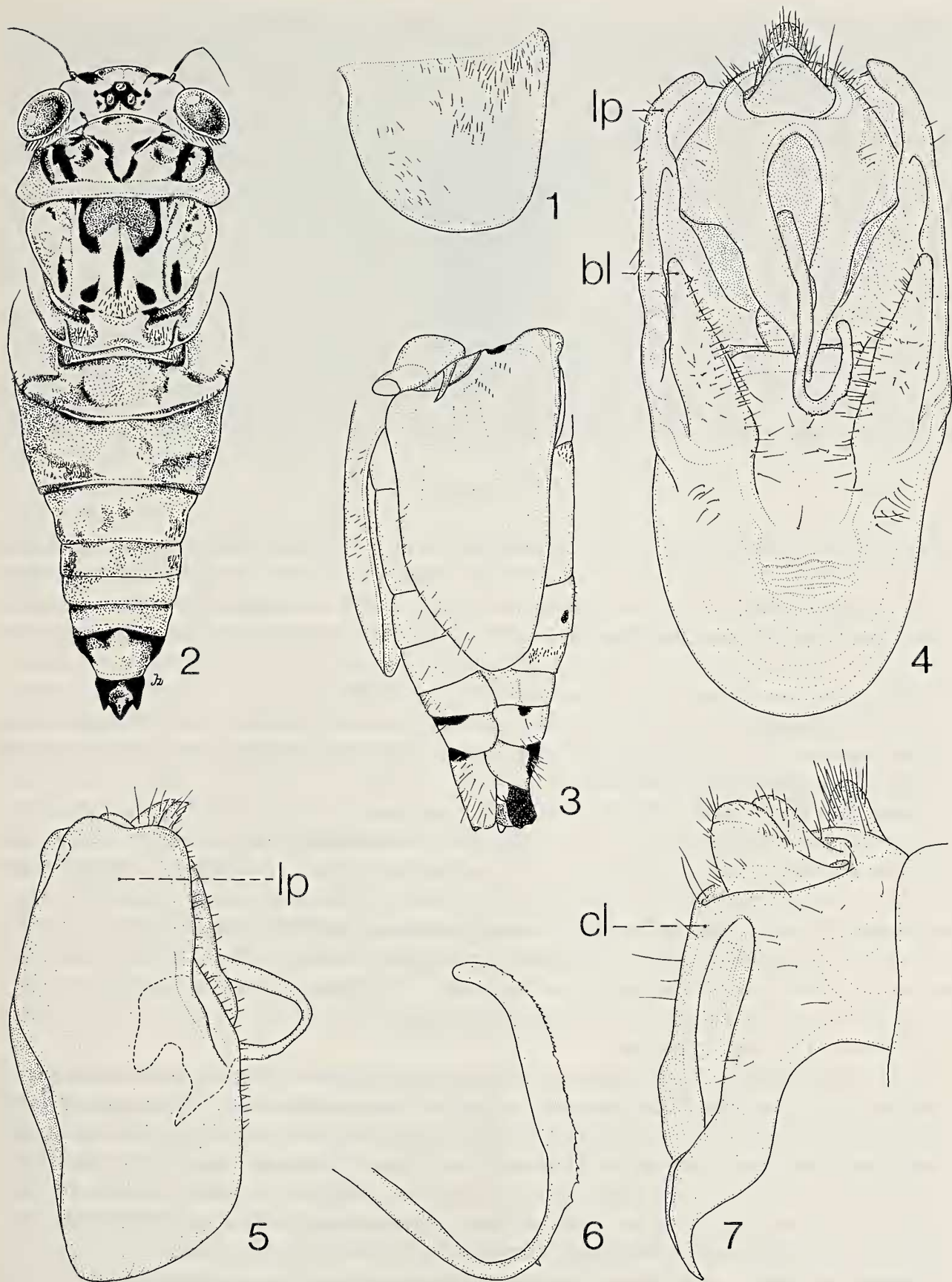
Type-species: *B. decorata* n. sp.

Diagnosis. — Postclypeus very short and weakly produced. Width of head including eyes narrower than width of pronotum. Lateral margins of pronotum amplified without tooth. Mesonotum narrower than width of head. Male operculum fairly broad and long, more than twice as long as broad. Tegmina and wings hyaline with brown spots. Male abdomen 1.4 times as long as head and thorax together. Pygofer very slender, more than twice as long as broad; lateral sides parallel. Lateral processes of the pygofer broad and truncate, running parallel and not extending beyond the anal valves. Epimeral triangle fairly long. Basal lobes of the pygofer very long. Claspers well developed. A ring at the bases of the claspers, representing the uncus, is not recognized in this genus. Aedeagus fairly long, strongly chitinized and flattened apically.

Brachylobopyga decorata n. sp.

Ground-colour of the body yellowish- to orange-brown. Coverage with white wax is found on the pronotum where the anterior oblique fissures meet the anterior margin of the pronotum, on the mesonotum along the midline, along the anterior half of the paramedian fasciae and in the proximolateral corners, on the abdomen a narrow wax triangle in the middle of abd. segm. 3 widens distad so that about two-thirds of the tergites of abd. segm. 4-7 are covered with wax.

Head. — Head above with entirely black supra-antennal plates, which are connected by a more or less interrupted brownish fascia along the anterior margin of the postclypeus. Vertex with a very characteristic black figure enclosing the ocelli (fig. 2) and a pair of small oval spots medioproximally of the eye. Underside of the postclypeus, anteclypeus, mandibular plates and genae yellowish brown with exception of a medial black-brown oval spot on the postclypeus at one third from the anterior margin and a narrow black area along the medial margin of the



Figs. 1-7. *Brachylobopyga decorata*, 1, 3-7 paratypes, 2, holotype. 1, timbal covering; 2, body in dorsal view; 3, male abdomen with operculum in ventro-lateral view; 4, pygofer in ventral view; 5, pygofer in lateral view; 6, apex of aedeagus in lateral view; 7, claspers in ventrolateral view; lp, lateral process of pygofer; bl, basal lobe of pygofer; cl, clasper.

mandibular plate near the clypeal suture. The post- and anteclypeus are sometimes not distinctly demarcated in the middle of the clypeal suture. The dark-brown to black apex of the yellow-brown rostrum reaches just beyond the hind coxae.



Fig. 8. *Brachylobopyga decorata*, holotype.

Pronotum. — Marking on pronotum black (fig. 2). A pair of paramedian, transverse, spots, which are sometimes connected, are situated immediately behind the anterior margin. In front of the pronotum collar there is a bowl-shaped figure of two diverging fasciae reaching to the posterior ends of the anterior oblique fissures; the posterior ends of these fasciae are just not connected. A narrow dark line runs distally along the posterior half of the anterior oblique fissure. The posterior oblique fissures are black. The rather broad, black colouration of the ambient fissure is restricted to the lateral bend and does not extend mediad of the black posterior oblique fissures. The anterior halves of the areas between the anterior and posterior oblique fissures are variably marked with black.

Mesonotum (fig. 2) with a median fascia, which is obscure or completely lacking in the anterior one third, and then slightly widens to two-thirds of its length, where it narrows again to the cruciform elevation. The slightly convergent paramedian fasciae reach from the anterior margin of the mesonotum to half-way the mesonotum disk; the fasciae are rather broad at the anterior margin, narrow suddenly, and widen again gradually. The two rather large black spots in front of the cruciform elevation are somewhat pointed in medioproximal direction. The anterior angles of the cruciform elevation are black also. The lateral part of the mesonotum bears an elongate spot on the posterior one third and occasionally either one, or two or more spots on the anterior part of the mesonotum.

Legs yellowish-brown. Underridge of the fore femora with two or three brown spines: a long spine strongly appressed against the femur at half its length, a somewhat shorter erected spine more distally and often a very small spine not far from the distal end. All femora yellowish-brown with exception of a dark line along the distal part of the underridge. Fore tibiae with a mainly dark-brown apical half, from where a dark line on the posterior side extends to the base of the tibia. Apical one third or one fourth of middle tibiae black-brown. Hind tibiae unmarked. Tarsi of fore and middle legs dark-brown, tarsi of hind legs ochraceous.

Tegmina and wings. — Hyaline. Venation light-brown turning to dark-brown apically. Tegmina with distinct infuscations at the basal veins of the second and third apical areas and in some specimens with very light infuscations at the basal veins of the fifth and seventh apical areas.

Operculum (fig. 3). — The operculum is straw-coloured with exception of a black spot at its base and reaches the sixth to seventh abdominal segment. The surface of the operculum is fairly convex and rugose. The operculum is widest close to its base and tapers rather strongly to the narrow rounded apex. The medial margin is weakly convex but distinctly outcurved basally, the outcurved parts of both opercula overlapping. The lateral margin of the operculum is weakly sinuate.

Abdomen. — Yellowish-brown. Timbal coverings as in fig. 1. Segm. 3 may bear a pair of rather large light-brownish paramedian marks, and segm. 4 and 5 bear a pair of small, brown sublateral marks. These marks on the segm. 3, 4 and 5 are not caused by pigmentation of the integument but are patches of minute black hairs. The dark-brown to black marking described hereafter is a pigment colouration of the integument: A narrow dark line along the medial two-thirds of the anterior margin of segm. 3, a pair of small lateral spots at the anterior margin of segm. 4 and mostly a pair of large lateral spots on segm. 6 and 7 (the lateral spots on segm. 6 and 7 are very obscure in the holotype). A pair of paramedian marks is situated against the anterior margin of the 8th tergite; these marks are mostly narrowly connected along this margin. The underside of the abdomen has a dark-brown colouration on the anterior half of sternite 7 and a more or less round, medioproximal spot on sternite 8.

Male genitalia (figs. 4-7). — The distal margin of the broad, truncate, lateral lobe of the pygofer is slightly sinuated. The basal lobes of the pygofer are sharply pointed distad and reach to about half-way the length of the clasper. Shape of the clasper as in fig. 7. The aedeagus (fig. 6) is rather long, strongly chitinated and flattened towards its apex. The lower margin of the flattened apical part is provided with a series of small spines. Clasper black. Lateral sides of the pygofer black to black-brown, except for a small yellowish spot near the distal margin and a large yellowish area in the middle of the pygofer (both yellowish areas are demarcated by a dashed line in fig. 5). The basal lobes of the pygofer and the basal half of the interior of the pygofer are yellowish.

Measurements. — Length of body: 25.7-30.2 mm; width of head: 8.4-9.3 mm; width of pronotum: 8.6-10.1 mm; width of mesonotum: 7.6-8.7 mm; length of tegminum: 36.0-41.5 mm.

Types: Holotype: "S. Celebes/Bua-Kraeng/5000' Febr. 1896/F. Fruhstorfer" (print; black cadre), "Distant coll. 1911-383" (print) ♂ British Museum (Nat. Hist.), London (BM). Paratypes: with same locality label as holotype: 4 ♂ Koninklijk Belgisch Instituut voor Natuurwetenschappen, Brussel (BIN), 3 ♂ BM; with same locality label but in addition: 1911, 6, 1 ♂ Staatliches Museum für Tierkunde, Dresden (SMD), 1911, 6, *Diceropyga* von allen Celebes-Arten durch Stirn u. Operc. abweichend. Ausgereift ?, 1 ♂ SMD, 26, Distant coll. 1911-383, *insularis* Walk., 1 ♂ BM.

The new taxon is found in Bua Kraeng, S. Sulawesi; Bua Kraeng refers to a mountain area (± 1000 m) NW of Gunung Lompobattang (Bonthain Peak) in southern Sulawesi.

PHYLOGENY

Duffels (1982) considered *Dilobopyga* the sister-group of all other genera of the subtribe, namely *Cosmopsaltria*, *Diceropyga* and *Aceropyga*. An apomorphy for *Dilobopyga* was found in the broad lateral processes of the pygofer, which extend far beyond the anal valves and slightly converge so that their apices nearly touch each other (Duffels, 1977). The other genera of the subtribe have more or less spine-like lateral pygofer processes.

In the same publication the description of some new taxa was announced as a source of new information for a proper analysis of the phylogeny of the subtribe. The present new genus is one of these taxa, and some other new descriptions will follow. Considering the position of the new genus *Brachylobopyga* in the phylogenetic reconstruction of the subtribe, it is an important point that this genus and *Dilobopyga* share the broad lateral processes of the pygofer, which provide a synapomorphy for the monophyletic group constituted for the two genera. Other characters which *Dilobopyga* and *Brachylobopyga* have in common are the long abdomen and the relatively long male opercula. The truncate condition of the lateral processes of the pygofer is a unique character of *Brachylobopyga*. This genus is furthermore characterized by some autapomorphies, which are not found in any other representative of the subtribe: a very short postclypeus, a very narrow pygofer, which is more than twice as long as broad and a long, strongly chitinated, apically flattened aedeagus. The lacking of a distinct uncus, which is

well developed in *Cosmopsaltria*, *Diceropyga* and *Aceropyga*, and weakly developed in *Dilobopyga* might be of interest for a future, more detailed, phylogenetic reconstruction. For the time being it is sufficient to conclude that the sister-genera *Dilobopyga* and *Brachylobopyga* form a monophyletic group, which is considered the sister-group of the complex constituted by the genera *Cosmopsaltria*, *Diceropyga* and *Aceropyga*.

BIOGEOGRAPHY

A historic biogeographic hypothesis for the Cosmopsaltriaria (Duffels, 1982) suggests that the common ancestor of the subtribe was an immigrant from the Philippines which invaded into Sulawesi and the Papuan area by two parallel Tertiary island arcs. The ancestor of *Dilobopyga* should have invaded into Sulawesi by the Sulawesi arc-trench system, whereas the ancestor of its sister-group, comprising *Cosmopsaltria*, *Diceropyga* and *Aceropyga*, distributed into the Papuan area via the Halmahera arc-trench system.

Dilobopyga is endemic in Sulawesi with one species, *D. gemina* (Distant), in the southern Moluccas. *Cosmopsaltria* developed mainly in the so-called Inner Melanesian Arc (Central New Guinea), whereas *Diceropyga* and *Aceropyga* are distributed along the Outer Melanesian Arc (Moluccas, northern New Guinea, Bismarck Archipelago, Solomon Islands, New Hebrides and Fiji Islands).

Brachylobopyga is the sister-genus of *Dilobopyga*. Both genera are found in Sulawesi. The new phylogenetic and zoogeographic data suggest that the common ancestor of the two genera invaded in Sulawesi.

ACKNOWLEDGEMENTS

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THERIA PRIMARIA (HAWORTH) EN T. RUPICAPRARIA (DENIS & SCHIFFERMÜLLER) (Lep.: Geometridae). In mijn collectie bevinden zich een achttal vlinders die ik aanvankelijk (zoals vermoedelijk vele verzamelaars) had gedetermineerd als *T. rupicaprararia*. Na het lezen van het artikel van de heer Lempke (*Ent. Ber., Amst.* 42: 68-72) was ik er echter van overtuigd, dat ik de andere soort, *primaria*, in bezit had. Bij zorgvuldige determinatie bleek mijn indruk juist te zijn. De data zijn: 5-29.III.1979, 12.II.1980, 29.I.1981 en 10.II.1982. In een kistje met overcomplete exemplaren trof ik nog een *primaria* aan plus een wat afgevoegen *rupicaprararia* van 29.III.1979. Alle exemplaren zijn mannetjes en alle zijn afkomstig van het terrein van de fakulteit der Wiskunde en Natuurwetenschappen te Nijmegen. Meidoorn, de voedselplant van de rupsen, is daar in ruime mate aanwezig.

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